

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. The basis of this listing is amended claims 1-33 on Amended Sheets 24-30 attached to the International Preliminary Report on Patentability (copy enclosed).

1. (Currently Amended) Apparatus for monitoring the status of a horse, wherein the apparatus includes:
 - (a) a blanket having a first sensor formed from a detector and a processing module, the first sensor being adapted to generate indicating data indicative of at least one health status indicator;
 - (b) a second sensor for generating position data indicative of the position of the horse;
 - (c) ~~wherein, in use,~~ a processing system adapted to determine from the position data, movement data indicative of the rate of movement of the horse, and determine the health status of the horse using the indicating data and the movement data; and,
 - (d) at least one battery connected to the first and second sensors and to a first part of an inductive coupling, provided in a recess in the processing module and wherein, in use, the battery is recharged by having the first part of the inductive coupling cooperate with a second part of the inductive coupling provided in a protrusion forming part of a hanging mechanism, the second part being coupled to an external power supply to thereby allow the at least one battery to be charged when the blanket is hung on the hanging mechanism.
2. (Original) Apparatus according to claim 1, wherein at least one of an antenna and a display is coupled to the rider in use, the apparatus further including a

cable for connecting the module and the at least one antenna and display, the cable including a connector which is adapted to disengage if the rider falls.

3. (Original) Apparatus according to claim 1, wherein the processing module includes a processing system for at least partially analysing at least one of the indicating and the position data, wherein the processing module is coupled to a display, the display being adapted to provide information to a rider in accordance with at least one of the indicating and the position data, and wherein the display is adapted to be mounted on the horses bridle in use.

4. (Original) Apparatus according to claim 3, wherein the display is wirelessly mounted on the horses bridle.

5. (Original) Apparatus according to claim 1, wherein the health status includes at least one of the horse's:

- (a) heart rate;
- (b) blood pressure;
- (c) temperature; breathing rate;
- (d) blood flow rate; and,
- (e) blood oxygenation levels.

6. (Original) Apparatus according to claim 1, wherein the second sensor is formed from a GPS sensor.

7. (Original) Apparatus according to claim 1, wherein the second sensor is adapted to be worn by a rider in use, and wherein the blanket further includes a connector for coupling the second sensor to the blanket in use.

8. (Original) Apparatus according to claim 1, wherein the second sensor is provided in the blanket.

9. (Original) Apparatus according to claim 1, wherein the blanket further includes a communications device coupled to the first and second sensors to thereby transfer at least one of the indicating and position data to a remote computer system the processing system being the remote computer system.
10. (Original) Apparatus according to claim 1, wherein the blanket further includes a store coupled to the first and second sensors to thereby store at least one of the indicating and position data to a remote computer system.
11. (Original) Apparatus according to claim 1, wherein the first sensor is a heart rate sensor and wherein the blanket includes at least one electrode coupled to the heart rate sensor and positioned so as to be in contact with the horse in use.
12. (Original) Apparatus according to claim 11, wherein the blanket includes at least one wire embedded in the blanket material, the wire being adapted to connect the heart rate sensor to the at least one electrode.
13. (Original) Apparatus according to claim 12, wherein the blanket is a woven blanket and wherein the wire is integrated within the weave of the blanket.
14. (Original) Apparatus according to claim 1, wherein the first sensor is removably mounted to a pouch, the pouch including one or more connectors adapted to cooperate with corresponding detectors provided on the sensor, to thereby couple the sensor to the blanket.
15. (Original) Apparatus for monitoring the status of a horse, wherein the apparatus includes a processing system adapted to:
 - (a) receive, indicating data indicative of at least one health status indicator and position data indicative of the position of the horse from apparatus according to claim 1;
 - (b) determine from the position data, movement data indicative of the rate of movement of the horse; and

- (c) determine the health status of the horse in accordance with the indicating data and the position data.

16. (Original) Apparatus according to claim 15, wherein the processing system includes a communications device for receiving the indicating and position data.

17. (Original) Apparatus according to claim 15, wherein the processing system determines the health status of the horse using a predetermined algorithm, the predetermined algorithm defining a relationship between the at least one health status indicator and movement of the horse.

18. (Original) Apparatus according to claim 17, wherein the predetermined algorithm includes:

- (a) determining at least a low heart rate during low speed exercise;
- (b) determining a number of heart rates during high speed exercise;
- (c) perform linear regression to calculate a linear regression line;
- (d) calculate, using the linear regression line, the velocities at at least one of:
 - (i) heart rates of 200 beats per minute (V200); and,
 - (ii) HRmax (VHRmax); and,
- (f) determine a fitness indicator in accordance with the calculated at least one velocity.

19. (Original) Apparatus according to claim 18, wherein the line regression line is determined in accordance with:

$$HR = a + bV,$$

where HR = heart rate;

a = constant;

b = constant; and,

V = velocity.

20. (Original) Apparatus according to claim 18, wherein the method further includes deleting any outlier values.

21. (Original) Apparatus according to claim 20, wherein the method includes deleting all outlier values by at least one of:
- (a) deleting all results with a velocity of less than 40 kph;
 - (b) deleting all results during the period after exercise (from the time of occurrence of HRmax);
 - (c) deleting all data equal to at least one of:
 - (i) HRmax;
 - (ii) HRmax – 1;
 - (iii) HRmax – 2; and,
 - (iv) HRmax – 3;
 - (d) deleting all data where there has been an increase in velocity, but that increase was not accompanied by an increase in HR;
 - (e) deleting any data points which have a HR that is more than 10 beats per minute above the regression line at that speed, and recalculate the regression line if such outliers are deleted.

22. (Original) Apparatus according to claim 15, wherein the processing system is adapted to obtain indicating data and position data relating to a number of horses, the processing system being adapted to determine the health status of each of the number of horses.

23. (Original) Apparatus for monitoring the status of a horse, wherein the apparatus includes a processing system adapted to:
- (a) receive, from a first sensor formed from a detector and a processing module, indicating data indicative of the heart rate of the horse;
 - (b) receive, from a second sensor, position data indicative of the position of the horse;
 - (c) determine from the position data, movement data indicative of the rate of movement of the horse; and,
 - (d) determine the health status of the horse in accordance with a predetermined algorithm, the predetermined algorithm defining a

relationship between the heart rate and the rate of movement of the horse, wherein the predetermined algorithm includes:

- (i) determining at least a low heart rate during low speed exercise;
- (ii) determining a number of heart rates during high speed exercise;
- (iii) perform linear regression to calculate a linear regression line:
 - (iv) calculate, using the linear regression line, the velocities at at least one of:
 - 1. heart rates of 200 beats per minute (V200); and,
 - 2. HRmax (VHRmax); and,
 - (v) determine a fitness indicator in accordance with the calculated at least one velocity.

24. (Original) Apparatus according to claim 23, the low heart rate being determined during trotting.

25. (Original) Apparatus according to claim 24, wherein the low heart rate is determined after the horse has been trotting for at least three minutes.

26. (Original) A system for monitoring the status of a horse, wherein the system includes:

- (a) a blanket having a first sensor formed from a detector and a processing module, the first sensor being adapted to generate indicating data indicative of at least one health status indicator; and,
- (b) a second sensor for generating position data indicative of the position of the horse; and,
- (c) at least one battery connected to the first and second sensors and to a first part of an inductive coupling, provided in a recess in the processing module and wherein, in use, the battery is recharged

by having the first part of the inductive coupling cooperate with a second part of the inductive coupling provided in a protrusion forming part of a hanging mechanism, the second part being coupled to an external power supply to thereby allow the at least one battery to be charged when the blanket is hung on the hanging mechanism; and,

- (d) a processing system, the processing system being adapted to:
 - i. determine from the position data, movement data indicative of the rate of movement of the horse, and
 - ii. determine from the indicating data and the movement data, the health status of the horse.

27. (Canceled)

28. (Original) A method of monitoring the health status of a horse, wherein the method includes:

- (a) using apparatus according to claim 1 to generate indicating data indicative of at least one health status indicator; and,
- (b) using a second sensor to generate position data indicative of the position of the horse; and,
- (c) determine from the position data, movement data indicative of the rate of movement of the horse, and
- (d) determining the health status of the horse in response to the indicating data and the movement data.

29. (Canceled)

30. (Original) A method of monitoring the health status of a horse, wherein the method includes, in a horse blanket:

- (a) generating indicating data using a first sensor formed from a detector and a processing module, the indicating data being indicative of at least one health status indicator;

- (b) obtaining position data from a second sensor, the position data being indicative of the position of the horse; and,
- (c) providing the indicating data and the position data to a processing system, the processing system being responsive to the indicating data and the position data to determine the health status of the horse, the processing system including a predetermined algorithm, the predetermined algorithm including:
 - (i) determining at least a low heart rate during low speed exercise;
 - (ii) determining a number of heart rates during high speed exercise;
 - (iii) perform linear regression to calculate a linear regression line;
 - (iv) calculate, using the linear regression line, the velocities at least one of:
 - (1) heart rates of 200 beats per minute (V200); and,
 - (2) Hrmax (VHRmax); and,
 - (v) determine a fitness indicator in accordance with the calculated at least one velocity.

31. (Canceled)

32. (Original) A method of monitoring the health status of a horse, wherein the method includes, in a processing system:

- (e) receiving, from a first sensor formed from a detector and a processing module, provided in a horse blanket, indicating data indicative of at least one health status indicator;
- (f) receiving, from a second sensor, position data indicative of the position of the horse; and,
- (g) determine from the position data, movement data indicative of the rate of movement of the horse, and

- (h) determining the health status of the horse in accordance with the indicating data and the position data.
- (i) determine the health status of the horse in accordance with a predetermined algorithm, the predetermined algorithm defining a relationship between the heart rate and the rate of movement of the horse, wherein the predetermined algorithm includes:
 - (i) determining at least a low heart rate during low speed exercise;
 - (ii) determining a number of heart rates during high speed exercise;
 - (iii) perform linear regression to calculate a linear regression line;
 - (iv) calculate, using the linear regression line, the velocities at least one of:
 - (1) heart rates of 200 beats per minute (V200); and,
 - (2) H_{rmax} (VHR_{max}); and
 - (v) determine a fitness indicator in accordance with the calculated at least one velocity.

33. (Canceled)